

# Technology for

# Alaskan Transportation

Winter 1990-Volume 15(4)  
Alaska Transportation Technology  
Transfer Program

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## The Edge Effect

Are you aware of the "edge" effect? It's when there's a sudden change in road surface height that runs in the direction of travel—for example, the side of the pavement or a longitudinal frost crack. A vehicle that hits a one-inch edge will swerve a little, an irritation for the driver, but it's not usually a safety hazard. Larger edges, though, can be hazardous.

Where do you find them? At the pavement's edge, in construction zones, and there are also the unexpected ones left by scraping snow and icepack from normally smooth streets. They can really throw the unwary driver around.

Picture a car with the right wheels on a lower unpaved shoulder, just off the

paved surface. The driver tries to steer the vehicle so that it gradually brings the right wheels back up onto the paved surface without reducing speed very much. The right front wheel hits the pavement edge at an extremely flat angle and is prevented from moving back onto the pavement. The driver steers a little more to the left. The wheel continues to rub against the pavement edge, so the vehicle doesn't respond. The forces pushing left equal the ones pushing right. The driver gradually increases his left turn until a critical angle is reached, and the right front wheel finally mounts the paved surface. Suddenly, in less than one wheel

(continued on page 2)

## Urethane Plow Edges

Folks in the northern tier states like Montana and Minnesota come close to having winter conditions like Alaska's. Urethane plow edges on truck plows are cost-effective there, so they may be something to look into for Alaskan use.

The urethane blade's primary characteristic is flexibility. This makes it forgiving—neither operator nor machine are jolted by hitting manholes and catch basins. The blade rides over them. Duluth recorded significantly fewer cracked radiators, plow frames, and batteries after the new edges were installed. Drivers, at first reluctant to switch from the old steel edges, found that they had a quieter ride, and that they could physically relax, since they didn't have to brace for the next hit on a casting. In fact, now they don't want to go out with anything but urethane on their cutting edges.

They also found that snowplowing gravel roads, even with some downpressure on the blade, didn't bring gravel up into a windrow. Gravel stays in place

because the blade rides on top of it. This means easier spring touch-up.

Urethane blades don't work well on motor graders, though. Urethane edges can't cut ice or remove packed snow, so when applying downpressure with graders, the blade rolled. The job wasn't good, and the edge received excessive wear.

The Duluth folks did a lot of testing before they bought, trying 5 or 6 different types of urethane. They had the additional incentive of having to maintain (without damage) some very expensive brick streets. They're spending more than 3 times the "per blade" cost than they did with the steel edges, but the bottom line is still a savings, so Director Carlson encourages others to give it a try. If you try them, please let the T2 office know how well they work in Alaska. We'd love to hear from you and promise to print a followup for any replies.

*Adapted from Roads & Bridges, June 1988.*

ALASKA TRANSPORTATION  
TECHNOLOGY TRANSFER

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the Federal Highway Administration  
and the Alaska Department of  
Transportation and Public Facilities.*

### The Edge Effect

(continued from page 1)

revolution, the force pushing right has disappeared, but the one pushing left is not only still there, it's grown. It's bigger because of increased grip on the pavement and increased load caused by cornering. The vehicle yaws radically to the left, pivoting about the right rear tire, until that wheel can be dragged up onto the pavement surface. The excessive left turn and yaw continue, and it all happens too fast for the driver to prevent swerving into the oncoming traffic lane.

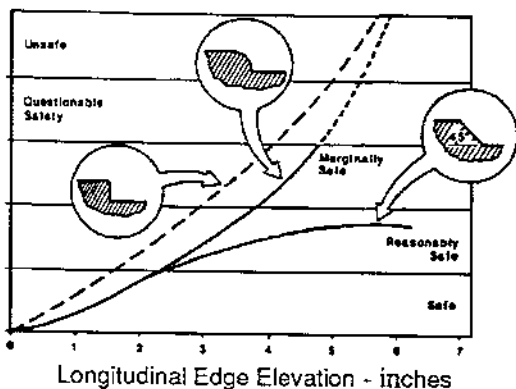
How high does the edge have to be before it becomes hazardous? It depends on the shape. Three different ones are shown in the figure, and you can see there's a big difference.

What happens when the right front wheel goes off the road, and the edge is

higher than the vehicle's clearance? Usually, it will yaw right and drag to a stop. The shaken occupants' most immediate danger is a rear end collision, though a rollover could occur in an extreme case.

### Rollovers—

nasty. You don't want one of those to happen on your job or section. For a loaded semi with trailer track width of 6 feet and a driver trying to steer back, an edge more than 13.5 inches could cause one. It could even be less if the driver really cranked it over, if the soil



was soft, and/or if the load shifted. Since cars have a lower center of gravity, an average car (58-inch track width, 5.6-inch clearance) probably wouldn't roll until the dropoff was 26 inches. However, the edge in some construction jobs can be measured in 10s of feet!

The big dropoffs obviously require barriers for safety. The need for warning signs or barriers may not be so obvious

for smaller edges. Actually, they may not need any signs at winter's beginning, especially if they're graded to a 45-degree slope. No one knows better than you, though, that traffic wear, icesheet and snowpack build-up, and shifting soils can change the situation. You may need to set up some temporary warnings.

Now that you know more about "the edge effect", you can have a keener eye for possible accident sites. Alert your co-workers, too.

Ref: "Safety in Construction Zones Where Pavement Edges and Dropoffs Exist" by Ivey, Mak, Cooner, & Marek, Texas Transportation Institute, 1988. ♦

## Easier, Safer Sign Changes

Last time we talked about sign vandalism; this time we'll share a couple of ways to simplify working with signs. "Walking the plank" came to us from landlocked Iowa!

Bolt a 2x12 to the bed of your sign truck (lengthwise), and hinge another 2x12 to the end of the fixed one. For stability, run a cable from a high point on the truck to the side of the extended plank, about a foot from the outer end. To travel, fold the board. To work, place safety warning devices, then extend the board and back the truck until the board reaches the sign. Walk right to it. A railing across the plank's end adds to worker stability (and confidence). A design modification would allow the plank to lower from the truck's right side so that the truck can be parked along the shoulder instead of across a traffic lane.

A more costly, complicated design hails from Minnesota. In one version, a commercially available walkway rolls out from the side of the truck. Two hydraulic stabilizing pads set the truck firmly in position and compensate for road slant. A swing-out boom with a hydraulic hammer is mounted on the truck's front, and there's a sign storage compartment in back. A hydraulic post puller is mounted underneath the truck bed, ready to be lifted out and set at the base of the post to be pulled.

This arrangement calls for a heavier duty truck than the simple folding plank; one county outfitted a Ford F350 Super Duty. There's also quite a cost range, from petty cash for planks and bolts to \$15,000 for a complete package. One's a wintertime project, the other's a budget item; it depends on your need.

Adapted from Technology News, March 1990, and the HERPICC Pothole Gazette, June 1990, from an article by John Ohrn in Center Line, spring 1990. ♦

## News & Views

### Book Review

"Guide to Earthwork Construction", the brainchild of William G. Weber, Jr., is written specifically for construction workers at the project engineer and technician level. This easy to understand guide provides practical information about embankment and earthwork construction.

Lost work experience due to personnel turnover in transportation agencies prompted Weber to design this book to highlight procedures that should be considered during construction.

Straight-forward and easy to follow discussions cover design concepts that are necessary for good earthwork construction. The book contains information on specific field problems and includes references to provide construction engineers with additional detailed information. It covers foundations, drainage stabilization and reinforcement, environmental factors and instrumentation. This handbook has received rave reviews from engineers and non-engineers alike.

The T2 Program library has this guide available for loan. Contact Susan Earp at 907/474-2484 for more information. ♦

### Environmental Forum

Alaska Petroleum Environmental Engineering (APEE) held an informative Environmental Forum in October that covered legal and engineering environmental perspectives. Fairbanks Title Agency handled the forum coordination.

The panel of speakers consisted of the executive officers of APEE, environmental engineers, attorneys, DEC personnel and a lab analyst. They covered many different aspects of how contaminated soils affect certain parties, how to select competent consultants, and the laws and regulations surrounding environmental issues.

Questions asked by the audience related to soil contamination. The forum was attended by lenders, DOT&PF personnel, realtors, builders, attorneys, lease land holders and others representing the real estate community.

Provided by Karen Garrity, Fairbanks Title Agency. ♦

**Editor's Note:** We received a perspective from Fairbanks reader Joe Nava on the "Highway Sign Vandalism" article in our Fall issue. Due to space limitations it will be printed in the Spring issue which is due out the end of March. ♦

# Time to Retire the Ol' Truck?

Tight budget times really test your management know-how. When it comes to the vehicle fleet—a major investment—do you have a way to decide whether to repair or replace? If you replace a vehicle too early, the original purchase price doesn't get spread over enough years; if you act too late, maintenance costs get out of hand. Take some winter office hours to assemble the information on the following two lists, and you'll have a handle on the decision.

## LIST 1: MONTHLY EQUIPMENT RECORD

1. Make & Model
2. Motor/Serial No.
3. Description
4. Department
5. Date Purchased
6. Current Date
7. I.D. Number
8. Purchase Price
9. Odometer/Hour Reading

### Costs:

10. Labor Due to Breakdowns
11. Contract Repair (Labor)
12. In-House Repair
13. Expendable Accessories
14. Parts
15. Lube & Oil
16. Fuel
17. Total Operation/Maintenance (sum of all costs)

## LIST 2: REPLACEMENT ANALYSIS WORKSHEET

- A. I.D. Number
- B. Purchase Price
- C. No. of Working Miles in the Last 12 Months
- D. Years of Ownership
- E. Total Op/Maint Cost

- F. No. Miles Driven
- G. Proportion Factor (C/F)
- H. Adjusted Op/Maint Costs (GxE)
- I. Sum of H's for Years Owned
- J. Avg Annual Op/Maint Cost (I/D)
- K. Avg Annual Capital Cost (B/D)
- L. Avg Annual Total Cost (J+K)

Decision time is signaled when L, which starts high but gets smaller with time, starts to rise again. Price a new vehicle, then

1. for the year when L is lowest, find J and subtract it from the most recent J,
2. multiply your answer by the number of years the equipment has been in service,
3. add this answer to the purchase price of "Ol' Truck".

This is the highest price you should be willing to pay for a new machine, adjusted for inflation. How does it compare to the price you found for the potential replacement?

Private-sector folks can stop here, but savvy agency managers need to break out their crystal balls. Depending on funding and application cycles, there may be a two-year wait until the new vehicle can be in its stall. That means you need to predict two years in advance of when it happens that the cost efficient action will be to buy. There's a finesse factor to being a good agency manager!

Computer-oriented readers will be heading to their machines to put these forms into a spreadsheet. A menu-driven Lotus 1-2-3 template, complete with documentation, is available from PC Trans in Kansas for \$25 (no shipping charge); call 913-864-5655.

*Adapted from an article by Pat Weaver, Kansas Trans Reporter, May 1990, and based on Bulletin 4: Equipment Replacement Considerations for the Small Fleet, CSU, Colorado Transportation Information Center, September 1987. ♦*

*Technology for Alaskan Transportation* is a quarterly newsletter that informs local transportation people in government and industry of useful training materials and services. The newsletter reports on practical information, new technology, and learning opportunities such as workshops, seminars, publications and videotapes. To get on our mailing list, to receive any of our services, or to contribute to the newsletter, contact:

Alaska Transportation  
Technology Transfer Program  
248 Duckering Building  
Fairbanks, Alaska 99775-0660  
(907)474-2484

The Alaska Transportation Technology Transfer Program is a cooperative effort between the Alaska Department of Transportation and Public Facilities (DOT&PF) and the University of Alaska Fairbanks Institute of Northern Engineering. This program is funded by the Federal Highway Administration and the Alaska DOT&PF.

The following people are involved in the program:

- \* John D. Martin, P.E., Director
- \* Sharon McLeod-Everette, SR/WA, DOT&PF Program Manager
- \* Larry Johnson, UAF Program Manager
- \* Susan Earp, Acting Training Coordinator/Technical Libraries
- \* Charlotte Barker, Newsletter Editor

## NEW PHONE NUMBER!

*The Technology Transfer Program has their new phone number.*

907/474-2484



## Happy Holidays!

The staff of T2 would like to wish all of our readers a Merry Christmas and a Happy New Year.

*Have a Safe Holiday Season!*



## Goodbye to

### Michelle Johnson

We sadly say goodbye to Michelle Johnson, who has been the Administrative Assistant for the Technology Transfer Program for over two years.

Many people have come to know about the T2 Program through Michelle.

The staff will certainly miss her energetic outlook and dedication for the T2 Program. Good luck and keep in touch! ♦

## THANK YOU!

A "thank you" goes out to Jon Holland, Alaska DOT&PF Maintenance Foreman, for his article on Ice Paving the Dalton Highway for our Fall issue of Planning, Design and Field Notes. Again, thank you and Good Luck in your endeavors!

*If you would like to donate an article to your newsletter, please contact our editor, Charlotte Barker at 907/474-6114, who would be happy to proof it for you. ♦*

## Calendar of Events

1991

**January 18: Seminar on Clarification of FHA, VA and Alaska Housing Programs.** Sponsored by the Society of Real Estate Appraisers. Anchorage. Contact Rhonda Weaver, FAX (907)258-2413.

**January 19 - 27: Installation.** Merging of the Institute of Real Estate Appraisers and the Society of Real Estate Appraisers. Central Plaza hotel in Los Angeles, CA. Contact Frank Morrison, (907)457-5043.

**February 25 - March 1, 1991. Course 101 Law and Engineering.** Juneau. Contact Diane DeRoux, (907)364-4222.

**February 25: Course 101 Appraisals and Negotiation.** Anchorage. Contact Curtis Sutton, (907)561-5122.

\* **March 1991: Gravel Road Maintenance.** Instructor: John Hopkins, Montana T2 Center. Contact Susan Earp (907)474-2484.

### Meetings Around the State

#### Alaska Society of Civil Engineers

**Anchorage:** Every third Tuesday at noon at the Northern Lights Inn.

**Fairbanks:** Every third Friday at noon at the Captain Bartlett Inn.

**Juneau:** Every second Wednesday at noon at the Westmark-Juneau. This chapter does not meet June-August.

#### Alaska Society of Professional Engineers.

**Fairbanks:** Every first Friday at noon at the Captain Bartlett Inn.

**Institute of Transportation.** Third Thursday of every month at Elmers in Anchorage.

#### International Right of Way Association.

**Anchorage:** Sourdough Chapter 49. Second Thursday of every month at noon at Anchorage International Inn except July and December.

**Fairbanks:** Arctic Trails Chapter 71. Second Wednesday of every month at noon at the Sunset Inn (except December).

**Juneau:** Totem Chapter 59. First Wednesday of every month at noon at Mike's Place in Douglas. *New address: P.O. Box 2400030, Douglas, Alaska, 99824.*



*We will be happy to include any relevant events you would like to publicize. For more information about events in Alaska, call Sharon McLeod-Everette at (907)474-2475, Larry Johnson at (907)474-7637, or Susan Earp at (907)474-2484.*

\* T2 Courses



## ALASKA TRANSPORTATION TECHNOLOGY TRANSFER

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## Hot Tips on a Cool(ant) Topic

Gone are the days when you can simply buy some antifreeze, dilute it, change out the cooling system, and call the job done. About 1/3 of engine overhauls in the shops are due to coolant system failure—that's enough of your maintenance budget to get your attention!

This number is fairly universal, you're not the only one. It's reported by the Society of Automotive Engineers, the American Society for Testing and Materials, private companies and fleets, and two Kansas DOT workers, Wesley Moore and Shop Superintendent Arnold Riemann. Mistery Moore and Riemann looked at their own records, then put together much of the following information.

Modern engines are made of different stuff—literally. Instead of Henry Ford's plain old steel product, the steel is alloyed with aluminum and other metals. These new engines weigh less, so fuel mileage has improved, which means that the new alloys are here to stay. However, the new metal chemistry requires new coolant chemistry, for example, a higher silicate content. Manufacturers have obliged. Unfortunately, high silicate and phosphate levels prove to be unstable in heavy-duty diesel engine cooling systems.

Everything eventually wears out, including antifreeze, which is why you should change the coolant every other year or so. The normal breakdown process is quite simple. During engine operation, acids (such as glycolic, acetic and formic) form

in the cooling system. Buffers and supplemental additives in the antifreeze absorb these acids up to a point; however, buffers have a saturation point that marks the end of the coolant's useful life.

For a simple analogy, picture a sponge (buffers) and dripping water (acids). As water drips, it is absorbed by the sponge. Once the sponge is full, no more water will be absorbed; it'll pass through. The sponge is not a useful drip catcher anymore. Likewise, once the buffers are used up, the acids stay free to circulate. The entire degradation



process is similar to the breakdown/oxidation process we see in lube oil.

*Antifreeze degradation does not affect the freeze point of the coolant, but it does cause the coolant to become extremely corrosive.*

The analogy of the sponge and water is just one part of the picture; other reactions speed the changes in the antifreeze. The whole process actually feeds on itself. Acids in the coolant corrode metal parts. Corrosion products then act as catalysts, increasing acid formation. You see the spiral.

We've set the scene; now let's break it into its parts: water, antifreeze, supplemental coolant additives (SCAs), and filtration. Start with water—better stated, start with **GOOD** water (distilled or deionized). The water you put into your cooling systems is as important as the antifreeze or SCAs for avoiding problems.

Water, being the universal solvent, dissolves at least a little bit of everything it touches, although you usually can't see anything. Unfortunately, these invisible things, especially chlorides or sulfates, are corrosive in the cooling system. Even SCAs can't protect against them.

Excessively hard water causes an additional problem, scaling. Scaling causes higher operating temperatures, which speed up the chemical reactions and the slide down the corrosion spiral. So arrange to have good water on hand. The economics of a small distilling set-up could compare very well with cutting down on engine overhauls.

Add your quality water to quality antifreeze. Together they make a good start, and, like any good maintenance program, starting a job right is the only way to finish it the same way. Start with a high-quality formulation that's blended for heavy-duty industry. The maximum recommended concentration of 70 percent antifreeze protects to -84 degrees F, so that's what to use in northern and western Alaskan regions, although our Panhandle friends can get away with less.

The next item is the technology that will hopefully prevent some of

those engine overhauls. Supplemental coolant additives, or SCAs, added to your coolant provide additional protection by preventing:

- \* solder corrosion/bloom
- \* oil fouling
- \* aluminum cavitation
- \* copper corrosion/erosion
- \* linear cavitation/corrosion
- \* seal & gasket degradation

If you use an SCA—and Moore and Riemann recommend it—research which one to use and stick with it for an entire coolant change, don't mix brands. SCAs from different companies are often chemically incompatible. Yet another caution: don't add liquid SCAs to systems having chemical water filters in them.

Monitoring the SCA levels should be part of every tune-up and engine check procedure. SCA depletion rates vary depending on engine condition, cooling system condition, engine type, and operating condition. Unfortunately, the devices for measuring the levels vary with the product, and each is proprietary to the specific manufacturer. It's important to have it on hand, though. Correct SCA and an-

tifreeze levels are what help keep vehicles out of the overhaul line. Underconcentration can lead to:

- \* linear or water pump impeller cavitation
- \* general corrosion
- \* deposits on heat transfer surfaces
- \* plugging of the system with corrosion products
- \* freezing and resultant overheating and cracking of blocks, heads, etc.

Overconcentration, on the other hand, can lead to:

- \* water pump seal seepage
- \* solder bloom or solder corrosion
- \* hose and gasket seepage
- \* plugging of the system with precipitates or gelled additive
- \* slush formation and resultant overheating

Filtering is the fourth of our coolant system components. Its niche in preventing problems is solids removal. Not every vehicle has a filter; you might consider installing one in those that don't. Small particles wind up in everybody's system, and these particles travel at high speeds. In effect,

they sandblast system components, actually eroding them. The erosion also removes the protective chemical film provided by the SCA. As a result, the corrosion spiral speeds up even more. Keeping the filter clean is good preventive maintenance.

Eventually it will be time to change coolant. Some advertisements claim that you can restore it by filtration, then recharge it with a chemical additive. From their research, Moore and Riemann say NO, that the **ONLY** way to restore the glycol to a usable form is distillation first, then recharging the chemical package. Simply filtering the used coolant and adding a chemical charge leaves the acids that formed in the system.

The costs of distilled water and the supplemental coolant additive will increase your equipment and supplies budget, but when you consider them, how do they compare to 1/3 of your engine overhaul expenses? Let us know.

*Adapted from KUTC Newsletter, May 1990, with assistance from UAF Physical Plant and College Road Brown & Sons, Inc.*

### **For More Information**

For back issues of our newsletters and notes, or to get on our mailing list, write: Publications, Transportation Technology Transfer Program, University of Alaska Fairbanks, 233 Duckering Building, Fairbanks, AK 99775-0660. For more information, you can also call (907) 474-7733.

## Fried Drives

### by Billy Connor

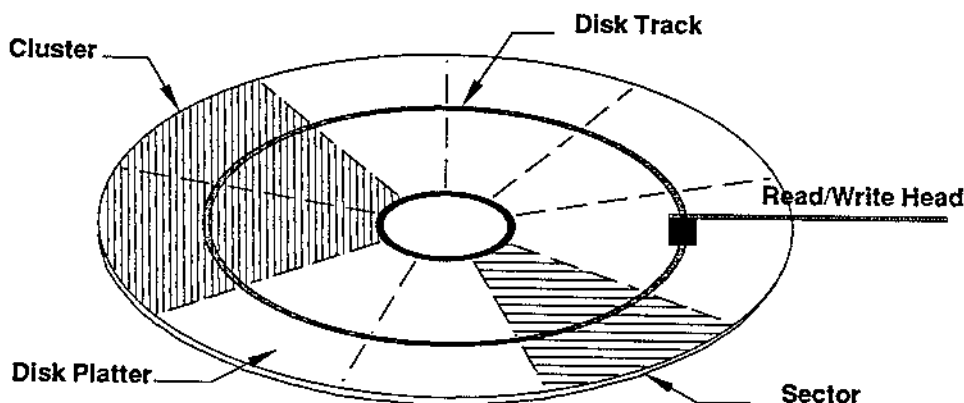
The personal computer can be your best desk-top companion, but even the most powerful computer is less effective without its hard drive. In order to keep your hard drive in peak performance, you first need to know a little about how it works. The basic information, presented here, provides a foundation for future articles that will introduce you to the computer's internal responses to external conditions.

The hard disk surface is coated with an iron oxide material similar to that used for tape recorders. Read/write heads, held just millionths of an inch above the disk surface, magnetize the hard disk. These heads are moved across the disk by a stepper motor that can place the head precisely on the disk. Each step on the motor defines a track. Hard drives use multiple platters (disks) and multiple heads, which move together. If you could look down through the platter, all the tracks under the heads are defined as a "cylinder." The figure illustrates the disk layout.

When you use the format command to prepare a disk for use, the **FORMAT** program divides the disk tracks into 512-byte sectors to create more manageable segments. Both 5-1/4" and 3-1/2" floppy disks are

separated into 8 or 9 sectors per track, while hard drives typically use 17 sectors per track. DOS allocates the open file space to files in units known as "clusters." A cluster is comprised of 2 to 8 sectors, depending on the type of disk. When a file needs space, DOS automatically allocates one or more clusters to that file.

There are 5 important areas within the disk:



1. the boot record
2. the partition table
3. the file allocation table
4. the directory
5. the data space.

The process described in this paragraph is what's commonly referred to in computer-ese as "booting." Every hard disk contains a master boot record that resides at track 0, head (side) 0, sector 1.

Should this location become damaged, the drive will be rendered useless. During booting, the master boot record reads the partition table, which describes the division of the hard disk. Then control of the boot process is passed to the boot record of the current boot table partition. This boot record is then loaded into memory and proceeds to run a small program called **BOOTSTRAP**. **BOOTSTRAP**, in turn, loads the operating system into memory.

The file allocation table (FAT) tells the computer the status of each cluster, that is, whether the cluster is free, in use, or damaged. With a damaged FAT, it may be impossible to locate a file. Directories record information about the files. If you type "dir," you will see most of this information.

However, you will not see the information telling the computer the point at which the cluster begins. The FAT indicates the chain of clusters associated with each file.

The data space can also cause problems for your computer. DOS stores files on the first available cluster. Because files are routinely written, appended, and erased, the clusters may not be consecutive. A file that is recorded onto non-consecutive clusters is "fragmented."



Fragmented files cause the drive to work harder each time that a file is read. Luckily, there are software programs such as PCTools, Norton Utilities, and Mace Utilities. These programs gather files into consecutive clusters to reduce the stress on the hard drive and to increase the speed of read/write activities. I suggest that everyone get one of these programs and utilize it regularly.

There are a few simple precautions that you can exercise to improve the environment of your hard drive. Following these suggestions can extend the life of your hard drive; improper care for your hard drive can result in irreparable damage.

### **AVOID TEMPERATURE EXTREMES**

Because the heads work with tolerances measured in millionths of an inch, temperature extremes will cause errors as the disk expands and contracts. If these changes are large enough, the head will not be properly aligned over the track. Improper alignments will result in the error "invalid drive specification" or "invalid partition table" appearing on

your monitor. The solution is to keep your computer in a location where temperatures remain fairly constant. A simple rule of thumb is that if you are comfortable in an area, it is probably a suitable location for your computer.

### **PARK THE HEADS BEFORE TURNING OFF THE MACHINE**

Whenever you turn off your computer, the heads come to rest over a point on the disk. The heads contain residual magnetism which, in time, can degrade the data beneath them. Parking the heads will prevent any magnetism from contacting data. Most of today's disk drives automatically park the heads when you turn off the machine, but older drives may not. Consult the manual or manufacturer if you are uncertain whether your computer contains this feature. If in doubt, use a program to park the heads when you shut down your computer.

### **TURN OFF THE COMPUTER BEFORE MOVING**

Moving your computer while it is on invites disaster. Even a small bump can cause the heads to touch

the spinning platters. This particular crisis is known as a "head crash." A head crash is the result of iron oxide being scraped off an area. If the head happens to be over the boot record area during a crash, the disk will become useless. Further, you will be faced with a large repair bill and the possible loss of all programs and data. With the very least of damage, you will still have oxide dust floating around the drive. The oxide dust could eventually come to rest under one of the heads and cause additional damage. The solution is to prepare before moving the machine. Park the heads, turn off the computer, and then feel free to move it without concern for damage.

### **NEXT TIME**

In the next issue, I will provide more ideas on drive maintenance. I will also introduce information on recovering lost data. In the meantime, remember, the best protection against lost data is to back up your drive.

### **For More Information**

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**ALASKA TRANSIT CONFERENCE**

An Alaska Transit Conference is scheduled for April 1991 in Anchorage, Alaska. The keynote speaker will be Ms. Shelly Brown, Urban Mass Transportation Administration Legal Counsel for Region 10. Region 10 includes Alaska, Washington, Oregon and Idaho. The recently enacted Americans With Disabilities Act (ADA) is the topic Ms. Brown will discuss in her keynote address.

The exact dates and location will be announced when that information becomes available. You should tentatively plan on setting aside two to three days if you're intending to attend this conference. Topics that will be covered include:

- *Section 3 Grants*
- *Section 8 Grants*
- *Section 16(b)(2) Grants*
- *Section 18 Grants*
- *Drug Testing Requirements*
- *Commercial Drivers License Program*
- *Americans With Disabilities Act*

If you are interested in attending, have a suggestion for a workshop, or would like to make a formal presentation, please contact Mr. Bruce E. Wells, State Transit Coordinator, Department of Transportation and Public Facilities, Plans, Programs and Budget, P.O. Box Z, Juneau, Alaska, 99801. He can also be contacted by calling (907)465-2957.

The Alaska Transit Association (ATA) is pleased to announce that it will hold its first formal meeting during the conference. Max Lyon, Fairbanks North Star Borough's Director of Transportation, is President and can answer any questions about the meeting. He can be reached at (907)452-6623. As April draws nearer, information will be sent out with confirmed times, places and events.

**ALASKA TRANSIT ASSOCIATION**

*(letter from Max C. Lyon, Jr.,  
ATA President to UMTA grant recipients)*

**November 1990**

In September of this year, various Alaskan organizations involved in transit met in Tacoma, Washington at the Washington State Transportation Conference. This group of Alaskans was assembled through the efforts of Bruce

Wells, the State Transit Coordinator for the State of Alaska, Department of Transportation and Public Facilities. To my knowledge, this is the first time in recent years such a meeting had been arranged. The makeup of this group was primarily those organizations receiving (or eligible to receive) either UMTA Section 18, Section 16(b)(2) funds, or Rural Transit Assistance Program (RTAP) funds.

In addition to the opportunity to meet other people who operate transit (or para transit) systems in Alaska, two important events took place.

One was the selection of the Alaskan RTAP Advisory Committee. For the first time, those systems involved with RTAP funds now have an avenue open to them for input into the program. This is a great step in assuring the RTAP funds are finally funnelled to where they should be going - rural transit!

The second, and probably the most important happening, was the formation of the ATA. Like a lot of things in Alaska, the transit systems have been independently just bobbing alone, hit or missing, and generally just plain struggling day to day for their existence. With federal, state, and local funds dwindling, and the advent of the Americans With Disabilities Act, Commercial Driver's License, Drug Testing, etc., it's time we started pulling together in a unified manner.

As with any other fledgling group, the Alaska Transit Association (ATA) must now be set up and organized so that we can begin functioning as a viable organization. At the Tacoma meeting an election of officers was held, resulting with:

***President***

Max C. Lyon, Jr.  
Fairbanks North Star Borough

***Vice-President***

Ron Nason  
Alaska Intercity Line

***Secretary***

Chris Aubertine  
Ketchikan Gateway Borough

In the immediate future, we must accomplish three things:

1. Finalize our mission statement
2. Solicit membership
3. Establish a method of operation

**Urban Mass Transportation Administration**

**UMTA RTAP Notes**

- a. bylaws
- b. dues
- c. meeting schedules
- d. headquarters (correspondence and otherwise)

Following is a list of names, addresses, and phone numbers of those attending the initial meeting. Please take a few minutes and jot down your ideas on this matter and send them to me.

In addition, this letter is being sent to all organizations receiving UMTA Section 18 and Section 16(b)(2) funds as well as the Municipality of Anchorage. If any of you know anyone else who should be contacted as a potential member, please pass a copy of this letter on to them and forward me their address.

Well, this is all for now. I'm looking forward to your replies and to the success of the ATA.

**Send correspondence to:**

Max C. Lyon, Jr.  
Fairbanks North Star Borough  
3175 Peger Road  
Fairbanks, Alaska 99709  
(907)452-6623

**Alaska Transit Association:**

Mr. Michael Slezak  
Wasilla Senior Center  
1301 Century Circle  
Wasilla, AK 99687

Chris Aubertine  
Ketchikan Gateway Borough  
344 Front Street  
Ketchikan, AK 99901

Max C. Lyon, Jr.  
Fairbanks North Star Borough  
3175 Peger Road  
Fairbanks, AK 99709

Daryl Ryder  
City of Kotzebue  
P.O. Box 46  
Kotzebue, AK 99752

Bruce E. Wells  
P.O. Box Z  
Juneau, AK 99811

John Bevis  
Challenge Alaska  
P.O. Box 110065  
Anchorage, AK 99511

Ron Nason  
Alaska Intercity Bus Line  
6250 Tuttle Place, Unit 6  
Anchorage, AK 99507

Noel C. Matteson  
Chugiak Senior Citizens  
General Delivery  
Chugiak, AK 99567

Carol Collins  
Mary Conrad Center  
9100 Centennial Drive  
Anchorage, AK 99504

Lillian Wilder  
Salvation Army Older Alaskans Programs  
1709 South Bragaw  
Anchorage, AK 99508

Bill Crandall  
Access Alaska  
3550 Airport Way Suite 3  
Fairbanks, AK 99709

David Ellis  
100 Chestnut Street  
Suite 207  
Harrisburg, PA 17101

John Houston  
North Slope Borough Transit  
P.O. Box 69  
Barrow, AK 99723

Steven L. Parker  
Southeast Senior Services  
419 6th Street, CCS Wing  
Juneau, AK 99801

Mark Wuitschick  
Copper River Native Association  
Drawer H  
Copper Center, AK 99573

***For More Information***

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- \_\_\_ **Bridge Waterways Analysis Model: Research Report**, ID-619, FHWA-RD-86-108, July 86, 112pp.
- \_\_\_ **Compacted-snow Runways: Guidelines for their design and construction in Antarctica**, ID-616/33, Special Report 89-10, April 1989, US Army Corps of Engineers.
- \_\_\_ **Continuing Project On Legal Problems Arising Out Of Highway Programs**, ID-623, NCHRP Legal Research Digest, November 1988, Number 1, 6pp.
- \_\_\_ **Cost-Effective Inventory Procedures for Highway Data Procedures for Highway Data Users Manual**, ID-636, FHWA, 73pp.
- \_\_\_ **Development and Application of Priority Accessible Network for Elderly and Handicapped Pedestrians**, ID-641, NTIS PB86-195898, April 1986, 27pp.
- \_\_\_ **Drill/Breaker Saves Time for Texas DOT**, ID-647, Public Works, Transportation Digest, June 1988, article.
- \_\_\_ **Environmental Auditing for Transportation Officials**, ID-611, Alaska Transportation Technology Transfer Center, June 1989, Cost \$30.00. Must be paid in advance.
- \_\_\_ **Environmental Effects On Pavements Executive Summary, Volume I**, ID-640, NTIS PB86-211018, May 85, 15pp.
- \_\_\_ **An Evaluation of Accident Surrogates For Safety Analysis of Rural Highways, Volume I: Executive Summary**, ID-625, NTIS, PB86198009, May 1986, 22pp.
- \_\_\_ **Field Management of Concrete Mixes, Early Strength Gain and Concrete Maturity**, ID-643, Demonstration Project No. 75, FHWA, December 1988.
- \_\_\_ **Films For Highway Safety and Traffic Engineers**, ID-620, FHWA-IP-86-25, December 1986, 184pp.
- \_\_\_ **Good Practice in Public Works**, ID-615, Special Report 54, APWA, 138pp.
- \_\_\_ **Highways: A Guide To Their Design and Re-design**, ID-637, RWS Books, 1989, 240pp.
- \_\_\_ **Hot Mix Asphalt Segregation: Causes and Cures**, ID-612, NAPA, September 1988, 21pp.
- \_\_\_ **How to Limit Traffic Congestion in Your Community**, ID-646, USDOT, DOT-I-84-25, February 1984, 44p.
- \_\_\_ **Implementation of Downtown Auto-Restricted Projects**, ID-645U, Technical Assistance - An UMTA Program, USDOT, DOT-I-84-33, June 1984, 223pp.
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- \_\_\_ **Low Cost Methods For Improving Traffic Operations On Two-Lane Roads**, ID-613, includes instructor's guide, information guide, a document for a model, and slides. RTAP Project #43, June 30, 1988.
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- \_\_\_ **More Effective Cold, Wet-Weather Patching Materials for Asphalt Pavements**, ID-618, December 1988, FHWA-RD-88-001.

***Alaskan Transportation Technology Transfer Program***

***Notes on Publications and Videos***

- \_\_\_\_ **Pavement Condition Measurement for Safety Improvements, Volume I Development of Procedures**, ID-635, Texas Transportation Institute, FHWA, June 1985, 190pp.
- \_\_\_\_ **Pavement Damage Functions for Cost Allocation, Volume 3: Flexible Pavement Damage Functions Developed from AASHTO Road Test Data**, ID-626, NTIS/FHWA, PB85138980, June 1984, 177pp.
- \_\_\_\_ **Pavement Surface Texture Significance and Measurement Volume 2, Comprehensive Report**, ID-638, NTIS PB86-168333, July 84, 262pp.
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- \_\_\_\_ **Traffic Conflict Techniques for Safety and Operations Engineers Guide**, ID-617B, January 1989, FHWA-IP-88-026.
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- \_\_\_\_ **TRB Highlights from the 1989 Annual Meeting**, ID-624, Virginia Transportation Research Council, 20pp.
- \_\_\_\_ **Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs: Final Rule and Notice**, ID-634, Federal Register, Part II, DOT/FHWA, March 1989, 40pp.
- \_\_\_\_ **Urban Public Transportation Glossary**, ID-631, TRB/NRC, 74pp.
- \_\_\_\_ **Western District Federal Division Flexible Pavement Design and Rehabilitation Shortcourse**, ID-621, FHWA, December 1987(Revised March 1988), 287pp.

These publications may be borrowed for two weeks. If you wish to receive a copy of any of the above publications to keep, please contact *Susan Earp* at the Alaska Technology Transfer Program at (907)474-2484 to see if it can be obtained or if duplication is possible.

Please print your name and address below, and mail to:

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University of Alaska Fairbanks  
233 Duckering Building  
Fairbanks, AK 99775-0660

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Phone: \_\_\_\_\_

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- \_\_\_ **Subsurface Utility Engineering: A Technology for the '90s**, ID138, 12:43min, Office of Engineering, FHWA, August 1990. This videotape is the beginning of a joint public/private sector effort to promote the use of subsurface utility engineering nationwide. This tape covers the benefits of this new technology in terms of time, money, and liability.

## VIDEOS PERTAINING TO NEWSLETTER ARTICLES

- \_\_\_ **Essentials of an Environmental Site Assessment**, ID-139, 50min, Professional Educational Systems, Inc., 1989. ISBN# 1-55957-066-0.
- \_\_\_ **Snow and Ice Control, Parts I and II**, ID-67, 27min, Utah DOT. Part I discusses snowplow equipment, supplies, routing, and types of service as used by the Utah DOT. Part II discusses types of snow, temperature, plowing procedures, and clean up.
- \_\_\_ **Snowplows**, ID-68, 20min, Utah DOT, 2 parts. Part I explains the mounting, daily checking and storing of straight-blade snowplows mounted on trucks. Part II covers the operation of these types of plows, including safe speeds, direction of travel, positioning, plowing near obstructions, and the hazards of water ponding.

## PUBLICATIONS PERTAINING TO NEWSLETTER ARTICLES

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- \_\_\_ **Effects of Calcium Magnesium Acetate on Small Lentic Environments in Interior Alaska: Final Report**, ID-563, AK-RD-87-19, August 1986, 67pp.
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- \_\_\_ **Practical Environmental Auditing Workshop**, ID-750, Alaska T2 Program and Arctic Trails Chapter 71 International Right of Way Association, Saturday, May 19, 1990. Cost: \$30.00.
- \_\_\_ **Removal of Multiway Stop Signs with Minimum Hazard, Volume II**, ID-133, FHWA-RD-84-085, 1984, 14pp.
- \_\_\_ **Oil Pollution Regulations**, ID-716, State of Alaska, 18AAC20, 18ACC75, Department of Environmental Conservation, 1984, 20pp.
- \_\_\_ **Safety in Construction Zones**, ID-345, Texas Transportation Institute, 50pp.

\_\_\_\_ **Urethane Plow Edges**, ID-648, Roads and Bridges, June 1988. Urethane plow edges protect brick streets, smooth operator nerves, protect equipment from damage in downtown Duluth, article.

\_\_\_\_ **User's Guide for Removal of Not Needed Traffic Signals**, ID-379, November 1980, FHWA.

These videos/publications may be borrowed for two weeks. If you wish to receive a copy of any of the above videos please contact *Susan Earp* at the Alaska Transportation Technology Transfer Program at (907)474-2484 to see if it can be obtained or if duplication is possible.

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233 Duckering Building  
Fairbanks, AK 99775-0660

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Organization: \_\_\_\_\_

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